

BASICLADIA CHELONUM (COLLINS) HOFFMANN &
TILDEN AND BASICLADIA CRASSA
HOFFMANN & TILDEN (CLADOPHORALES)
IN SOUTHERN ILLINOIS

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Since the works of Tiffany and Britton (1952), the algal flora of southern Illinois has been studied extensively. However, reports of *Basicladia* are absent in the literature (Dillard & Mohlenbrock, 1962; Dillard, Weik, & Mohlenbrock, 1963; Weik & Mohlenbrock, 1963; Wunderlin & Wunderlin, 1968; Wunderlin, 1971; Dillard & Tindall, 1973; Williams & Tindall, 1975).

On March 25, 1977, while collecting for phytoplankton in Little Grassy Lake, Williamson County, Illinois, *Basicladia chelonum* (Collins) Hoffman & Tilden was found epizoic upon the musk turtle, *Sternotherus odoratus* Latreille. Although *B. chelonum* had a general distribution upon the turtle's shell, on the plastron it was found sporadically in small bunches, only a few millimeters in diameter, and on the carapace it was present in massive tufts. The alga on the anterior portion of the carapace was very grass-green in appearance, whereas that on the posterior half was darkened greatly by the presence of epiphytic diatoms, whose taxa included: *Gomphonema acuminatum* Ehrb., *G. gracile* Ehrb. emend V.H., *G. parvulum* Kutz., and *Achnanthes minutissima* Kutz.

A few days later, on March 31, 1977, two other turtles were collected at Prairie Creek Pond in Franklin County, Illinois. One of the turtles examined was a musk turtle. Algae were absent from its plastron, but its carapace was covered by a luxurious green growth of *Basicladia chelonum* (Figure 1). The filaments of *B. chelonum* were generally free of epiphytic algae although cells of *Eunotia curvata* (Kutz.) Lagerst. were encountered occasionally. The second turtle collected at this locality was a painted turtle, *Chrysemys picta* Schneider. *Basicladia crassa* Hoffman & Tilden was found on the carapace of this specimen. Its plastron was free of algal growth. Filaments of *B. chelonum* were encountered but to a lesser extent than *B. crassa*. The filaments of *B. crassa* were yellow-green in appearance, darkened somewhat by the extreme abundance of epiphytes. *Oedogonium* sp., *Eunotia curvata* (Kutz.) Lagerst., *Gom-*



Figure 1. A musk turtle with the epizoic alga, *Basicladia chelonum*.

phonema gracile Ehrb. emend. V.H., and *G. parvulum* Kutz. were the most abundant epiphytes observed. However, cells of *Surirella angustata* Kutz. and *Synedra* sp. were also frequent upon the filaments. In addition to the epiphytes, numerous filaments of *Draparnaldia plumosa* (Vauch.) C. A. Agardh. and *Tribonema minus* (Wille) Hazen. were intermingled among the erect thalli of *Basicladia*.

Edgren et al. (1953) conducted a major study of the genus *Basicladia* in relation to its epizoic existence upon turtles. They found that the musk turtle (*Sternotherus odoratus*) and the painted turtle (*Chrysemys picta*) were colonized to a greater extent than were other species of turtles. Their findings further showed that *Basicladia chelonum* was usually more abundant than was *B. crassa* upon *S. odoratus*. When the carapaces of *C. picta* were analyzed, Edgren et al. found *B. crassa* to be more frequent than *B. chelonum*. My observations support these findings.

Interestingly enough, two of the three turtles in this study had their epizoic *Basycladia* heavily populated by a large variety of epiphytes. Edgren et al. (1953) found only one epiphyte in their study of over 700 turtles. It is quite possible that these investigators overlooked the diatoms upon examination of their specimens. This matter of epiphytic algae upon the epizoic *Basycladia* warrants further investigation.

LITERATURE CITED

- DILLARD, G. E., & R. H. MOHLENBROCK. 1962. The Desmidiaceae of Madison Pond, Williamson County, Illinois. *Am. Midl. Nat.* **67**: 204-207.
- DILLARD, G. E., K. L. WEIK, & R. H. MOHLENBROCK. 1963. Notes on the algal flora of Illinois. *Am. Midl. Nat.* **69**: 127-135.
- DILLARD, G. E., & D. R. TINDALL. 1973. Notes on the algal flora of Illinois, III. Additions to the Chlorophyceae. *Ohio Jour. Sci.* **73**: 229-233.
- EDGREN, R. A., M. K. EDGREN, & L. H. TIFFANY. 1953. Some North American turtles and their epizoophytic algae. *Ecology* **34**: 731-740.
- TIFFANY, L. H., & M. E. BRITTON. 1952. *The algae of Illinois*. The University of Chicago Press, Chicago. 407 pp.
- WEIK, K. L., & R. H. MOHLENBROCK. 1963. Notes on the algal flora of Illinois. II. The genus *Trachelomonas* Ehrenberg of the Pine Hills, Union County, Illinois. *Trans. Amer. Micr. Soc.* **82**: 381-390.
- WILLIAMS, J. T., & D. R. TINDALL. 1975. Chromosome numbers for species of Characeae from southern Illinois. *Am. Midl. Nat.* **93**: 330-338.
- WUNDERLIN, T. F., & R. P. WUNDERLIN. 1968. A preliminary survey of the algal flora of Horseshoe Lake, Alexander County, Illinois. *Am. Midl. Nat.* **79**: 534-539.
- WUNDERLIN, T. F. 1971. A survey of the freshwater algae of Union County, Illinois. *Castanea* **36**: 1-53.

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